

REMARKS/ARGUMENTS

This Amendment is submitted in response to the Final Office Action dated May 11, 2004. Claims 1-32 are pending, and claims 1, 9, 14, and 22 have been amended.

Claims 1, 9, 14, and 22 were amended to recite that the user request to apply an action to one of the uploaded images is from the image capture device. Support for the amendment may be found throughout the specification, see for example, page 10, line 4, for instance. Accordingly, no new matter has been presented. In addition, claims 1, 9, and 22 have been amended to delete unnecessary reference to the phrase "the steps of."

The Examiner rejected claims 1-17 and 19-32 under 35 USC §102(e) as being anticipated by Safai et al. (6,167,469). The Examiner rejected claims 18 under 35 USC §103(a) as being unpatentable over Safai in view of Hull et al. (5,806,005). Applicant respectfully traverses the rejections.

The present invention provides a method and system for reducing storage and transmission bandwidth requirements of a portable, network-capable, image capture device, such as a wireless digital camera. One reason why digital cameras require so much transmission bandwidth is because images stored on the digital camera must often times be transmitted over the Internet more than once. For example, consider the example where the user wants to send selected images to ten different groups of people at work from the digital camera and selects the same image several times. The user may choose to send images 1, 2, and 8 to group 1, images 2, 5, 8 and 9 to group 2, images 3, 4, 8, and 10 to group 3. Typically, this would be done by separate emails, one to each distinct group of people, especially if the user sends the images to each group from the camera at different times. As can be seen, the same image (8) would be

included in each email, and image 8 would be transmitted from the camera over the Internet several times, consuming a large amount of bandwidth.

The present invention eliminates the need to transmit the same image several times from an image capture device, such as a digital camera, by assigning image identifiers (e.g., image IDs) to the captured images, and transmitting the captured images to a server for storage only once. Thereafter, when the device user wishes to perform an action on one of the previously uploaded images, the capture device transmits to the server the requested action and the image identifier corresponding to the image, rather than the image itself. The server then performs the requested action on the identified image.

Continuing with the example above, the camera will transmit image 8 to the server only once, either before or during the first email request. For subsequent e-mails from the camera in which image 8 is specified, only the image ID for image 8 is transmitted in the email request to the server. Using the ID for image 8, the server would then retrieve, and then include, the previously uploaded image 8 in the subsequent e-mails to groups x, y, and z that were requested by the user.

Transmitting only the image identifier of the image after an image is uploaded the first time eliminates the need to retransmit the image, thereby reducing transmission bandwidth requirements required to perform multiple operations on the image, such as sending the image to multiple destinations at different times. In a second aspect of the present invention, a method for reducing storage requirements is provided by reducing the size of each of the image files corresponding to the uploaded images on the image capture device. Reducing the image files of each of the uploaded images after image uploading frees memory space for the capture of additional images and reduces storage requirements.

Safai is directed to a method and apparatus for transporting digital images from a digital camera to a server. The digital camera executes a transport application that enables a user to send one or more pictures from the camera to one or more external addresses (column 7, lines 31-37). The transport application enables the user to select or enter an email address, choose a photo, record a voice message, and then send the photo to a server. The server then emails the photo to the specified address.

Claim 1

In paragraphs 32 and 33 of the Office Action, in response to Applicant's statement that "Safai fails to teach or suggest only uploading the image identifier to the server, rather than the image itself, after the first time, the image is sent in order to eliminate the need to retransmit the image," the Examiner stated "Examiner respectfully disagrees as the amended claims neither are narrow nor do they recite statements which clarify the scope of the invention."

Applicant is perplexed by the Examiner's statement, since claim 1 explicitly recites: "a first time captured images are uploaded to a server, assigning a respective image identifier to each of the captured images" and in response to a user request to apply an action to one of the uploaded images..., transmitting the requested action and the image identifier, rather than the image itself, to the server, thereby eliminating the need to retransmit the image and reducing transmission bandwidth."

In addition, applicant has amended the independent claims to make clear that the user request to apply an action to one of the uploaded images occurs "from the portable image capture device."

Applicant does not disagree with the Examiner that Safai may teach the sending of an image from a camera to a server for storage in a storage device, and then accesses the storage

device to transport the pictures for printing, where the accessing takes place using an identifier (e.g., image name).

However, Safai fails to teach or suggest that after an image is uploaded and associated with an image ID that the request for a subsequent service, such as printing the image, is made *from the camera*. Instead, Safai implies that these subsequent services are requested by the user by accessing a web page of the service over the Internet using a conventional browser. In Col. 15, line 52, Safai states that “the printing operations are carried out upon request by an owner of a camera who has an account registered with the server.” As is well-known in the art, having an account registered with a server implies that the user is given a login ID and password to access services provided by the server at a website. An example is the uploading photos to Yahoo photos, and then navigating to the Yahoo photos web page with a web browser on a PC to view the images and to order prints. The Examiner has failed to produce a reference whereby the subsequent ordering of print services for previously uploaded images is done via the same portable device that was used to upload the images in the first place.

However, even if one extends Safai to a situation where the user makes a request from the camera for a service for a previously uploaded image, Safai would still fail to teach or suggest that only “the image identifier, rather than the image itself” is transmitted with the requested action to the server, as recited in claim 1.

The shortcoming of Safai can be illustrated using the example described above in which a user wants to send selected images to different groups of people from the digital camera and selects the same image several times. In that example, the user may want to send images 1, 2, and 8 to group 1, images 2, 5, 8 and 9 to group 2, images 3, 4, 8, and 10 to group 3. In Safai’s system, this would be done by indicating the selected images and the recipient e-mail addresses

for group 1. This request along with the images would be sent to the server, which would perform the e-mailing. The same process would be done for group 2 and then for group 3. Image 8 would be included in each of the three requests uploaded to the server, and image 8 would be transmitted from the camera over the Internet three times, consuming a large amount of bandwidth. Nothing in Safai teaches or suggest that “a first time captured images are uploaded to a server, assigning a respective image identifier to each of the captured images” and in response to a user request to apply an action to one of the uploaded images *from the portable image capture device....*, transmitting the requested action and *the image identifier, rather than the image itself*, to the server, thereby eliminating the need to retransmit the image and reducing transmission bandwidth, ”as recited in claim 1.

Claims 9 and 14

The arguments with respect to claim 1 that Safai fails to teach or suggest “a user request...from the portable image capture device” apply with full force and effect to claims 9 and 14. Further, Safai fails to teach or suggest the steps of “determining if the selected image is marked; and if the selected image is marked, uploading the image identifier to the server, wherein the server performs the action on the image identified by the image identifier,” as recited in independent claims 9 and 14.

The Examiner pointed out that Safai teaches the ability to select and deselect an image, depicted with a highlight border around the picture. However, selecting and deselecting an image is not the same as marking. Selecting and deselecting images is a way to form a group of images on which some action will be performed, such as uploading the images to the server. After the action is performed on the selected images, the selection information regarding the

temporarily formed group is lost. Selection in this fashion is done in both the present invention and by Safai. Whereas a “selection” is temporary for a current action, marking is persistent. In the present invention, after a selected image is sent to the server, the image is “marked” as sent and the mark is saved with the image (e.g., in metadata) to indicate whether an image has been uploaded to the server or not. When a user makes a subsequent request to perform some action on an image, the camera accesses this mark to determine whether an image has already been sent. If it has, then only its identifier is uploaded, rather than the image itself. Safai’s temporary selecting and deselecting fail to teach or suggest this functionality.

Claim 22

With respect to independent claim 22, in addition to failing to teach or suggest uploading an image once, Safai also fails to teach or suggest the embodiment of the present invention where the image identifier is assigned to an uploaded image *by the server*, and then downloaded “to the image capture device for association with the corresponding uploaded image.” The Examiner opines that Safai discloses image identifier assignment by a server stating, “hyperlinking an image file by the web site inherently associates an address with the file, thus providing an identifier for the image by the server.”

In the present specification, the image identifier is described as being associated with the image name. As is well-known in the art, a hyperlink to an image may include the image name, but a hyperlink is not considered analogous to an identifier of the image, as its image name.

In addition, because the images are uploaded from the camera prior to receiving a hyperlink in Safai, the images must have already been given an image name by the camera. Thus, in the case where the image identifier is not the image name, Safai fails to teach or suggest a situation where Safai's server creates and assigns identifiers to upload images.

Dependent Claims

It is respectfully submitted that the passages of Safai cited by the Examiner to reject the dependent claims, for the most part, fail to relate at all to the subject matter of the claims. A few examples are provided below for illustration.

In the rejection of claim 2 the Examiner cited columns 4 and 10, lines 1-27 and 24-39, respectively, for teaching "reducing the size of each of the image files corresponding to the uploaded images." However, column 4, lines 1-27 states:

Still another feature relates to generating authentication information relating to the image; and storing the authentication information in the digital camera in association with the image. A related feature is that the step of generating comprises the steps of computing and storing a hash value by applying a one-way hash function to the image. Another related feature is that the step of generating comprises the steps of computing and storing a hash value by applying a one-way hash function to the image and to a key value. In another related feature, generating comprises the steps of computing and storing a unique private key value using a public key cryptography algorithm; and computing and storing a hash value by applying a one-way hash function to the image and to the unique private key value. According to another feature, the step of storing further comprises the steps of storing the authentication information in association with the image during the step of transporting the image from the digital camera to the address.

In yet another related feature, the step of generating includes the step of generating authentication information relating to the image based upon the content of the image, a key value, and information that describes the camera. A variation of this feature is that the step of generating includes the step of generating authentication information relating to the image based upon the content of the image, a key value, and information that describes a user of the camera.

And column 10, lines 24-39 states:

Generally, after entering one or more addresses, a user will next select one or more stored images, such as digital photos, to be sent to the one or more addresses. As shown in FIG. 5B, in block 522 a user selects the Choose Photo button 404 from menu 400. In response, in block 524 the transport application displays a photo select screen. FIG. 4C is a block diagram of a photo select screen 430 that is generated during the image selection step of the image transport application. The photo select screen 430 comprises a plurality of images 432a-432d, each of which is a small-size representation of a previously taken digital

photo that is stored in the digital camera 100. Thus, the images 432a-432d comprise "thumbnail" views of photos that are stored in the camera. Although four (4) images 432a-432d are shown in FIG. 4C, this number is not critical, and any number of images can be shown in thumbnail form.

Nothing in these passages relates all to reducing previously uploaded images, nor do they even mention the terms "reduce," "reducing," or "reduction."

In the rejection of claim 3, the Examiner cited column 4, lines 10-13 for disclosing "uploading the image identifiers with the captured images." However, column 4, lines 10-13 states:

In another related feature, generating comprises the steps of computing and storing a unique private key value using a public key cryptography algorithm; and computing and storing a hash value by applying a one-way hash function to the image and to the unique private key value.

Nothing in this passage relates all to "uploading the image identifiers with the captured images."

In rejection of claims 4 and 25, the Examiner cited columns 4 and 10, lines 1-26 and 60-67, respectively, for disclosing "deleting at least a portion of each of the image files" (after uploading). Column 4, lines 1-26 is reproduced above, and has nothing to do with deleting images. Column 10, lines 60-67 states:

A DONE button 436 is used to terminate image selection. A counter field 438 displays the current number of images, from among images 432a-432d and others stored in the camera, that have been selected. A ZOOM button or icon 440 enables a user to zoom in on a portion of an image that is displayed as the enlarged image 434. A TRASH button or icon 442 enables a user to delete a selected image from the storage device of the digital camera.

Although this passage at least mentioned deleting an image, the passage explicitly requires the user to delete a selected image manually. Therefore, Safai fails to teach or suggest a situation where image files are deleted after being reduced in size after being uploaded, as required in claim 4, which includes limitations of claims 2 and 1.


As above, the passages used to reject claims 5, 12, 17 and 26 likewise fail to teach or suggest the limitations therein. For brevity, Applicant will not argue the remaining dependent claims, but will assert that the arguments made above with respect to the independent claims apply with full force and effect to the dependent claims. Therefore, the dependent claims are allowable for least the same reasons as the allowable independent claims.

In view of the foregoing, it is submitted that independent claims 1, 9, 14, and 22 are allowable over the cited references. Because the secondary references stand or fall with the primary references, claims 2-8, 10-13, 15-21, and 23-32 are allowable because they are dependent upon the allowable independent claims. Accordingly, Applicant respectfully requests reconsideration and passage to issue of claims 1-32 as now presented.

Applicant's attorney believes that this application is in condition for allowance. Should any unresolved issues remain, Examiner is invited to call Applicant's attorney at the telephone number indicated below.

Respectfully submitted,
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Date



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